

SHORTIA

NEWSLETTER OF THE

WESTERN CAROLINA BOTANICAL CLUB

AUTUMN 2013



Shortia galacifolia

Oconee Bells

WESTERN CAROLINA BOTANICAL CLUB

President	Helen Smith	Secretary	Joy Charlebois
Vice-President	Jeanne Smith	Treasurer	Alan Graham

MEMBER NEWS

New Members: Sharon Johnson and Sharon Kotch, Hendersonville
Barbara Fant, Birmingham, AL
Joe-Ann McCoy, Horse Shoe
Karen Hudson-Brown, Gerton

Returning Member: Jackie Burke, Tryon



Field Trip Cancellations. On occasion field trips must be cancelled or changed either for weather conditions or other reasons such as road closings. Such changes are sent out by email to all members at the latest by 7 AM the day of the field trip. If you do not have email access, we will try to reach local members by telephone by 7 AM. If you are in doubt, contact a leader or co-leader whose telephone number is listed on the schedule. When a field trip is cancelled, no member will be at the contact point. Programs are cancelled when Henderson County Schools are closed (see <http://www.hendersoncountypublicschools.nc.org>) but NOT necessarily canceled because of delayed opening.



BULLINGTON REPORT

The Bullington Botanical Bunch: Larason and Juanita Lambert, Frances Jones, Carol Lim, and Bonnie Arbuckle continue to work on the Garden on Tuesday mornings. The support of WCBC members by their Tuesday workdays and their \$500 annual donation has helped Bullington Gardens grow and attract visitors.

New contributions to the garden include a rustic fence built by Larason along the path separating the Native Woodland Garden from the Master Gardeners' Shade Garden. New plants include Galax (*Galax urceolata*), Foam Flower (*Tierella cordifolia*), Wild Geranium (*Geranium maculatum*), Deciduous Ginger (*Asarum canadense*), Maple-leaf Viburnum (*Viburnum acerifolium*), Pennsylvania Sedge (*Carex pensylvanica*) Grassleaf Golden Aster (*Pityopsis graminifolia*), Maryland Golden Aster (*Chrysopsis mariana*), and Curtis Aster (*Symphotrichum retroflexum*).



SAVE ENDANGERED SHORTIA

Northern Oconee bells, *Shortia galacifolia* var. *brevistyla*, is one of North Carolina's rarest plants and has a history that makes it special to botanists and plant enthusiasts. This Endangered Species is at great risk.

After eluding the searches of the botanists whom Asa Gray sent to find it, a teen-ager rediscovered *Shortia* in 1877. The *Shortia* found in McDowell County is recognized as a unique variety: *brevistyla*. It is found only in a handful of populations growing along a few streams in McDowell County, NC and nowhere else in the world.

One extraordinarily thriving population is privately owned. The owner is willing to sell it to the North Carolina Plant Conservation Program in order to ensure its perpetual preservation and care.

The approximately 30-acre site is north of Marion bordered on one side by the Pisgah National Forest and on the other three by private lands. It is accessible by a single gated gravel road off the paved highway that has an easement. A small spring-fed branch flows through the property and the *Shortia* hugs the banks of this small stream for perhaps 3/8 of a mile. The springs feeding the stream are on the property so this entire small watershed could be protected.

The owner inherited this property from his father who purchased it in the late 1960's or early 1970's. He lived there in small dwelling on the site of the old sawmill until he passed away a few years ago.

He knew the story of *Shortia* well and appreciated what a special plant it was. For years, he actively managed for *Shortia* by trimming lower Rhododendron branches and blowing leaves off the plants. Under his care, the site thrived and the number of plants increased. His son has followed his father's practices and has an equal, if not greater love for the site and for *Shortia*.

The McDowell County *Shortia* site on the Catawba River visited by Asa Gray in 1879 was destroyed by over-collecting years ago. That should be a reminder to us that we could easily lose this unique variety of *Shortia*. This site could be the "jewel in the crown" of the North Carolina Plant Conservation Program. Mail your contribution to help purchase this site to: Friends of Plant Conservation, 1060 Mail Service Center, Raleigh, NC 27611. Mark your check "Shortia."



Book Review: *The Forest Unseen: A Year's Watch in Nature* by David George Haskell.

Haskell, a professor of biology at the University of the South in Sewanee, Tennessee, has written a delightful and poetic book that provides wonderful glimpses into the world of the forest. He takes the example of Tibetan monks who have used small drawings called “mandalas” as visual representations of the entire universe and chooses a one-square-meter patch of old growth forest as his mandala. Each week during an entire year, he visits his mandala and describes, in fifty-two short chapters, what he finds there. One or two plants or animals that he sees each time is considered and discussed in charmingly written detail. For example, during one visit he describes a storm: “The wind’s force has yet to die down. It surges across the forest in pulses, setting the trees into violent motion. The canopy protests with a loud hiss, the sound of millions of pummeled leaves. The forest groans and cracks as tired wood fibers are pushed beyond their endurance.”

Not only does Haskell describe the aboveground world, but reminds us that, “Fungi remain hidden from our eyes until their belowground filaments sprout fruiting bodies. The flotilla of yellow, orange, and red is a reminder of the vast network of life below the mandala’s surface.”

The reader will learn many interesting facts about the forest and its inhabitants, for example, that “Herbs that were formerly green are now edged with deep purple.” “These leaves will hold on through the entire winter, eking out small amounts of photosynthesis on warm days and dying back only when fresh springtime growth supersedes them.” He points out that, “Of all the birds in the mandala, the cuckoo travels the farthest. The Amazonian forests east of the Andes are its winter home.”

The various scavengers that populate the mandala, from tiny microbes to turkey vultures (*Cathartes*, the purger) serve an important function as purifiers, administering what Haskell calls “ecological last rites, speeding the material transformation of large animals from carcass to freed nutrients.”

Haskell documents the many dangers to the forest from pollution, development, global warming, and the invasion of exotic species, such as *Pawlonia* and *Ailanthus*.

Haskell concludes, “My foray into the upper surface of the mandala’s soil has revealed more diversity of animal body designs than could be found in all of a zoo’s displays. Multitudes crawl, squirm and writhe below my feet.”



LINNAEUS AND HIS APOSTLES (continued)

The travelogues of all of Linnaeus's apostles are now available, in modern English, in the eleven-book series *The Linnaeus Apostles*, the term with which Linnaeus, who was both pious and grandiose, referred to his students toward the end of his life. Produced by the IK Foundation, a non-profit in the United Kingdom, the set costs about \$2,000 altogether, although each volume can be purchased individually. The translations run to nearly 6,000 pages—printed on paper from a mill near Linnaeus's birthplace and accompanied by reproductions of the apostles' maps, transcripts of folk music, and drawings of everything from Russian rabbit traps to Tahitian chiefs.

Apostle Johan Peter Falck's travels in Russia and Central Asia explore a startling number of local intoxication rituals, including the smoking of hemp flowers, "inebriation from fly-fungus," and a Kyrgyz practice of making "a vertical hole in urine-soaked ground," filling it with tobacco, topping it with a smoldering coal, then inhaling the smoke through hollow stalks while lying on one's belly. Falck became deeply depressed as his expedition wore on, plagued with hypochondria and feelings of worthlessness, and increasingly addicted to laudanum. His descriptions of wild and spirited tribes reveal, at times, a sort of longing. The Kyrgyz "are so fond of their beloved steppes that they would probably be content to roam around them until Judgment Day, and they regard death as utterly abhorrent," he writes. The remark lingers poignantly in light of his eventual suicide.

The apostles were highly aware of the risks they took—the deaths of their fellows rattled them terribly—and most, like their mentor, tended to be pious. A few were ordained clerics. But they were also Lutherans, with a no-nonsense sensibility well suited to their practical missions. In Palestine, apostle Frederik Hasselquist answers "no" when his Catholic monk hosts ask him if he is on a religious pilgrimage. This, he soon realizes, was the wrong response in a residence where "every thing, even to the table on which we supped, was holy," but he botanizes Mount Zion with impunity and finds a new species of tick at the site of Christ's temptation. The Middle East in general could be very tough going: apostle Peter Forsskål is treated kindly by rabbis and Bedouins but is shaken by an encounter with marauding Arabs on horseback, although, he concedes, "it is through adventures of this kind that knowledge must be acquired." Forsskål died, many close shaves later, in Yemen.

Racist or anti-Semitic statements are notably scarce in these volumes. Particularly striking are the apostles' reactions to slavery and the slave trade, with which they frequently come into contact. Not one is impressed, and several bear prolonged and intimate witness to slavery's daily practice and cruelties.

Sparrman emerged from his Africa travels a committed abolitionist. Apostle Daniel Rolander's long-lost journal, rediscovered by the series' editor in a Copenhagen library, mocks the Dutch planters of Suriname, who, Rolander finds, spend their days lying in hammocks rocked by slaves, eating elaborate meals cooked by slaves, drinking rum poured by slaves, drunkenly forcing slaves to perform ribald musical acts and beating them for no reason. Apostle Adam Afzelius, who set up his specimen-collecting operations in the slave-trading port of Freetown, Sierra Leone, writes a damning, hypnotic account of a sociopathic young English trader who profits from the caprice of local chiefs. Nestled among the chilling scenes that Afzelius describes in Freetown—shackled children, women getting their teeth knocked out for crying, gratuitous genital exams—his botanical notes can feel a bit out of place.

Not all the apostles emerge from these pages as humanitarians or compelling writers. One, Olof Torén, comes off as boorish, content to sum up much of India and China as "idolators." Another, a favorite pupil of Linnaeus's named Pehr Löfving, has his nose so deep in plants that his Spain journal is nearly unreadable, although it is redeemed now and then by accounts of bullfights.

One apostle's record is heartbreakingly thin; only three letters survive of Andreas Berlin. "Great God!," writes the 27-year-old Berlin, newly arrived on the shores of Guinea. "What splendor and pulchritude, what symmetry in all things, what assets for the necessities of life have you not granted and assigned to this land and its inhabitants! Nature's appearance is as though transformed, I am like a blind person who, having just had his eyes opened, sees the sun for the first time; he falls down in wonder, but knows not why." Berlin died shortly after sending these words, and some plants, back to Linnaeus in Uppsala.

(From "Brotherhood of the Butterfly Net," by Jennie Erin Smith in the February 4, 2012 issue of *The Wall Street Journal*.)



DISCOVERY OF *FRANKLINIA ALATAMAHA*

John and William Bartram discovered that "rare and elegant flowering shrub," *Franklinia alatamaha* on October 1, 1765, after losing their way to the crossing of the Altamaha River at Fort Barrington in southeast Georgia. They named it after their friend, Benjamin Franklin. William Bartram is thought to have returned to the site of discovery ten and twelve years later and gathered seeds. In 1774, he sent an illustration of *Franklinia* to his patron, Dr. John Fothergill in London. William definitely brought seed back to his father's garden when he returned to Philadelphia in January 1777.

Franklinia alatamaha is apparently now extinct in the wild. The Bartrams were able to save *Franklinia* from extinction by propagating these seeds in their Philadelphia botanical garden, from which they introduced the shrub into cultivation. It is likely that most, if not all *Franklinias* growing anywhere today are descended from William Bartram's original collection. Before 1900 *Franklinia* was extremely rare in gardens and could easily have been lost to the world after the last Bartram heirs were forced to sell the family botanic garden in 1850. But today, it is flourishing in cultivation.

As a member of the Tea family of Theaceae, it bears a strong family resemblance in both leaves and flowers to Tea and to the Camellia, as well as to the native *Gordonia lasianthus*, or Loblolly Bay and *Stewartia*.
(From *Bartram Broadside*, Spring 2000.)



PEARSON FALLS GAINS A GREEN FACILITY

This summer, Pearson Falls, the 260-acre wildlife and bird sanctuary in Tryon, gained a new "green" building with composting toilets and a living roof. Over the years, the lack of facilities has been the most prevalent complaint to the Tryon Garden Club, which maintains the preserve.

The 13X13 building of HardiPlank, a fiber/cement siding, houses two separate rooms, one designated as a family unit, complete with changing table. They feature Clivus Multrum toilets, which are waterless and over time yield compost material that may be used as a fertilizer/soil conditioner. The faucets and electricity are touchless, helping to keep costs down. A water fountain is out front. The building will be heated in the winter.



WANTED: Assistant Editor and/or proofreader of *Shortia*. Call Paula Robbins at 828-274-4166, if you wish to volunteer.



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Asheville, NC 28803

FIRST CLASS

SHORTIA

A quarterly publication of the Western Carolina Botanical Club

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Autumn 2013

The purpose of the Club is to study the plants of the southern Appalachian Mountains and the Southeast through field trips and indoor meetings. Membership is open to all. Individual/family memberships are \$15. New members joining from the period July 1-December 31 pay \$8. All memberships are renewable on January first of each year. Send dues to Alan Graham, 544 Tip Top Road, Brevard, NC 29812.

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WINTER 2013-14



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MEMBER NEWS

Annual Dues:

January 1, 2014 is the date for all membership renewals. Please send your check for \$15 to Alan Graham, 544 Tip Top Road, Brevard, NC 28712. Include the coupon on page 6 that you can copy.



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New Members: Penny Longhurst, Brevard
Susan Goldsworthy, Brevard



New Member Profile: Susan Goldsworthy served in the environment /agro-forestry sector of Malawi (eastern Africa, surrounded by Tanzania, Mozambique, Zimpabwe and Zambia) from 2007 to 2009 as a Peace Corps Volunteer. Before that, she founded and directed Community Gardens of Chester County, PA. She earned a B.S. in Social Psychology from Northwestern University, an M.S. in Child Development from the University of Pittsburgh, and M.Sc. in Ethnobotany from the Royal Botanical Gardens at Kew/University of Kent. Susan taught from 1986-1998 at Penn State University and directed the community gardening program in the city of Chester, PA. Most recently she served in Peace Corps Response in Pohnpei, Micronesia from 2011 to 2012.

DECIDUOUS MAGNOLIA TREES of the SOUTHERN APPALACHIANS

Giant leaves covered the forest floor in my woods. Discovering three related species of native deciduous magnolia growing in close proximity was a thrill. They grow mostly in our mountain ridges and moist valleys.

Cucumber Magnolia (*Magnolia acuminata*). This species has the smallest leaves of the three: 6 to 10 inches long, with wavy margins. They are yellow-green in color and have a pointed apex. The fruit is a red-brown cone-like aggregate, only 2 to 3 inches long, which holds two-seeded fruits released in early fall. The mature tree is the tallest of the three, growing into a 60- to 80-foot pyramid-shaped beauty. 'Acuminata' refers to the pointed leaf apex, and 'cucumber' references the fruit aggregate's fruit shape. Fall leaf color is dull yellow to brown.

Fraser Magnolia (*Magnolia fraseri*). This fairly common magnolia is named for John Fraser (1750-1811) and is well known for the auriculate leaves that grow to 10 to 12 inches. The distinct ear-like lobes at the narrow base of the bright green leaves are unique. The leaf apex grows to a blunt point, is broadest beyond the midpoint, and fall color is golden yellow to brown. Also known as "Mountain Magnolia," this tree grows to 30 to 70 feet tall in rich coves and cool slopes of the southern Appalachians. The flower is fragrant, pale yellow, and is very large (8 to 10 inches). The fruit is a cone-like aggregate 4- to 5-inches long and sheds two-seeded fruits in late summer.

Umbrella Magnolia (*Magnolia tripetala*) Arrangements of spreading leaves clustered at the branch terminals has resulted in this tree's common name, "umbrella." "*Tripetala*" refers to three sepals in the flower, which are longer than the petals. The flowers are creamy white, 7 to 10 inches long, and have an unpleasant odor. Its deciduous leaves are the largest of the three magnolias—reaching 18 to 20 inches in length! The leaves are smooth, wavy, and are broadly elliptical in shape. This magnolia is sometimes described as a large shrub or small tree, reaching 10 to 35 feet. It is the smallest of the three, but boasts the largest leaves. *Magnolia tripetala* is similar to Bigleaf Magnolia, (*Magnolia macrophylla*), which is not native to our southern mountains. Andre Michaux discovered it in 1789 in the area near Charlotte, NC.

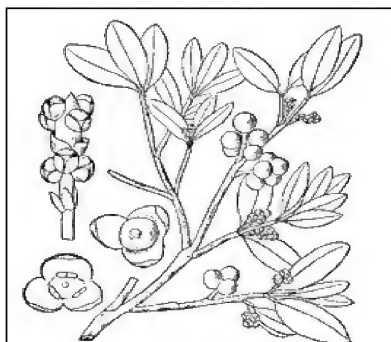
I also found several Horse Sugar trees. *Symplocos tinctoria*, a small tree or shrub, is sometimes called Sweetleaf, as its leaves are relished by grazing horses and wildlife because of their sweet flavor. Leaves have a purple color in fall and winter and are pointed at the apex.

As fall turns to winter, nature continues to amaze me. So many discoveries to make, so many joys to behold! Go outside!

OAK MISTLETOE – *PHORADENDRON LEUCARPUM*

Members of the Christmas Mistletoe Family (Viscaceae) are found all over the world. The genus *Phoradendron*, native to warm temperate and tropical regions of the Americas, is most diverse in the Amazon rainforest. *Phoradendron leucarpum*, commonly known as Oak Mistletoe, Eastern Mistletoe, and American Mistletoe, occurs on hardwood trees in the eastern US, from the East Coast west to Texas and Illinois. Various species of mistletoe grow in North America. Those in the Western US are generally parasitic on conifers.

Oak Mistletoe is a fairly common, distinctive, semi-parasitic evergreen subshrub. Mistletoe produces chlorophyll, and thereby its own food, but uses modified roots that penetrate the host tree's circulatory system to obtain water and minerals. It is not a serious threat to the host tree. Heavy infestations cause little loss of vigor. Oak maple grows most often on high branches of hardwood trees. Despite its common name, other types of trees, such as Red Maple, are often hosts.



Britton, N.L., and A. Brown. 1913.
*An illustrated flora of the northern
United States, Canada and the
British Possessions.*

This green-twigged plant has opposite branching with thick, leathery, oblong, evergreen leaves, inconspicuous flowers, and white berries in ball-shaped clumps. The globular berries of Oak Mistletoe are translucent and usually occur in clusters of a half-dozen or more. In close view, the berry, about three-eighths of an inch in diameter, bears an orange spot on the terminal end. This spot is the remains of the old flower that formed the fruit.

Mistletoe is not frequently observed in our area, but is quite noticeable when its deciduous tree hosts lose their leaves. In the Carolinas, it is most common in the Coastal Plain, fairly common in the Piedmont, and uncommon in the Mountains.

Many fruit-loving birds devour mistletoe berries. The seed-bearing, sticky pulp often adheres to the bills of feeding birds and is subsequently transferred as the avian carrier wipes its bill on the bark or a twig of a potential host tree. Mistletoe is the host plant for caterpillars of the Great Purple Hairstreak.

Although historically used as an herbal remedy for various ailments, it is toxic to humans if ingested in large quantities and somewhat toxic to dogs and cats. However, recent research on humans shows that a mistletoe plant extract (a small nontoxic dose of galactose-specific lectin) activates non-specific immune defense responses, improving quality of life for patients undergoing chemo and radiation therapies.

European mistletoe (*Viscum album*) was believed to be magical by the ancient Greeks, Romans, and Celtic druids. The custom of kissing under the mistletoe began more than 2000 years ago! One tradition holds that a man is entitled to kiss a woman under the mistletoe, after which he removes one berry. When all berries are gone, the kissing ends.

Jenny Lellinger



BOOK REVIEW

Elizabeth Gilbert, *The Signature of All Things*. Viking.

Take an author who has received several awards and written two books that were *New York Times* Best Sellers, add a heroine who was a botanist specializing in the study of mosses and a hero who painted beautiful portraits of orchids, sprinkle in some kinky sex, and you have a novel that will be read with relish by all who read this newsletter. The 500-page book takes place in many locations that are familiar to folks interested in botanical history: Kew Gardens in London, the Hortus Botanicus in Amsterdam, Philadelphia, the Linnaean Society of London, and Tahiti. Such famous names as Sir Joseph Banks, Charles Darwin, Captain Cook, and Alfred Russell Wallace make brief appearances.

The book's title refers to the theories of sixteenth-century German cobbler, Jacob Boehme, who believed in something he called "the signature of all things"—namely, that God had hidden clues for humanity's betterment inside the design of every flower, leaf, fruit, and tree on earth. This is why, he believed, so many medicinal plants resembled the disease they were meant to cure, or the organs they were able to treat (for example, liverworts, *Marchantiophyta*).

In addition to the theory of natural selection, the reader is also introduced to the nineteenth century fascination with spiritualism and mesmerism. Gilbert has certainly conducted her research, and the writing is beautifully done. *The Signature of All Things* is a page-turner you won't want to miss.

Paula Robbins



CLEMATIS IN THE VIORNAE, NORTH AMERICA, AMERICAN BELLS

There are currently twenty-four species of *Clematis* in the *Viorna* group in North America: most are native to the southeastern United States. Many of these species have been reported to grow as garden plants as far north as zone 3.

Two newly named species are not included in the Flora of North America: *Clematis carrizoensis* from the Carrizo sands of northeastern Texas and *Clematis vinacea* from the Ocoee River area in Polk County, Tennessee. More species are likely to be named. One is from Arkansas and has unique foliage that separates it from other species in the *Viorna* group from the southeastern US; it may be related to *bigelovii* or *palmeri* from Arizona and New Mexico. Another is from the Coosa River area and has tiny hairs covering its sepals.

North Carolina hosts three native species: *ochroleuca*, *crispa*, and *viorna*. The latter two are vines, while *ochroleuca* is a short non-vining plant that flowers in spring and has fuzzy pale yellow to pale purple flowers. *Clematis coactilis*, *albicoma* and *viticaulis* are small in stature, suitable for rock gardens and containers.

Clematis viticaulis, native only to a narrow range in Virginia, is currently grown in the NC Botanic Garden at Chapel Hill. Their plants are from the collection of wild seeds by the Arnold Arboretum in Boston. The Arnold grew the seeds and then distributed all the plants to the NC Botanical Garden in Charlotte.

What makes the flowers of the *Viorna* group exceptional is the perfect engineering that enables hummingbirds, bees and other pollinators to dip into nectar even following a thunderstorm or heavy rain. Their bell-shaped flowers are unlike open-faced flowers that wash out in rain. Colors of the *Viorna* group range from nearly white to purple, violet, pink, lavender, to red. The queen of the lot is *texensis*, which has been heavily used in hybridizing to insure a red color and heat tolerance.

Japanese growers have long grown the *Viorna* species from North America because Dr. John Wurdack from the Smithsonian collected seeds in the wild and dispersed them to both Japanese and European growers.

In 2013 I have collected seed of many species, open-pollinated, but most come true to species or could be hybridized with other *Viorna* types. If you would like seed, please contact me. My website is Clematisviorna.info. It was created because there was a lack of information about these species here in America. While Europeans, Japanese and others on the planet enjoy our species, we Americans are barely aware of their existence. There are few native species growing in arboreta and botanic gardens.

Carol Lim

Application for Membership

The following information can be copied and sent to the address given below.

I am interested in becoming a member of the WESTERN CAROLINA BOTANICAL CLUB.

Enclosed is my check for \$ _____

Name

Mailing address

City, State, Zip

Telephone number

e-mail address

Make check out to: Western Carolina Botanical Club
and mail to:

Alan Graham
544 Tip Top Road
Brevard, NC 28712

SHORTIA
c/o Paula I. Robbins
100 Wesley Drive, apt. 111
Asheville, NC 28803

FIRST CLASS

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Proof-reader: Lucy Prim

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